

**REMARKS**

Claims 1-14 and 22-28 are pending in this application, of which claims 7-9, 12, 13 are withdrawn pursuant to the November 28, 2005 Restriction Requirement and the April 12, 2006 Election of Species Requirement. By this Amendment, claims 1, 6-9 and 14 are amended, claims 15-21 are canceled, and claims 22-28 are added.

Entry of the amendments is proper under 37 C.F.R. §1.116 since the amendments: (a) place the application in condition for allowance (for the reasons discussed herein); (b) do not raise any new issue requiring further search and/or consideration; (c) do not present any additional claims without canceling a corresponding number of finally rejected claims; and (d) place the application in better form for appeal, should an appeal be necessary. Entry of the amendments is thus respectfully requested.

Applicants appreciate the courtesies shown to Applicants' representative by Examiner Goff in the December 12 personal interview. Applicants' separate record of the substance of the interview is incorporated into the following remarks.

**I. Allowable Claims**

Applicants appreciate the Office Action's indication that claim 6 is allowable.

**II. Claim Rejections Under 35 U.S.C. §112**

The Office Action (i) rejects claims 1-6, 10, 11 and 14 under 35 U.S.C. §112, first paragraph, as not complying with the written description requirement and (ii) rejects claims 1-6, 10, 11 and 14 under 35 U.S.C. §112, second paragraph, as being indefinite. Applicants respectfully traverse the rejections.

Without conceding that the rejections are proper or well-founded, by this Amendment, independent claims 1 and 14 are amended, and new independent claim 22 is added, to recite "three-dimensional structure" instead of "groove." Thus, the rejections are moot.

For the foregoing reasons, Applicants respectfully request withdrawal of the rejections.

**III. Claim Rejection Under 35 U.S.C. §102**

The Office Action rejects claim 14 under 35 U.S.C. §102(b) over U.S. Patent No. 4,859,378 to Wolcott. Applicants respectfully traverse the rejection.

Wolcott discloses a method of ultrasonically joining workpieces. An upstanding stud 14 of a first thermoplastic workpiece 12 is inserted into a circular aperture 18 having a chamfer 20 in second workpiece 16 (Fig. 1). Horn 22 applies ultrasonic energy to the upstanding stud 14, by which upstanding stud 14 softens and fills chamfer 20 (col. 2, lines 42-46). Figs. 1-2 show chamfer 20 to be an angled surface at the opening of circular aperture 18, connecting a surface of second workpiece 16 and the internal surface of circular aperture 18, i.e., a bevel.

Thus, Wolcott fails to disclose (1) a three-dimensional structure which includes a wall substantially orthogonal to a surface of the second object and (2) applying thermal energy from an external heat source.

For the foregoing reasons, Applicants respectfully request withdrawal of the rejection.

**IV. Claim Rejections Under 35 U.S.C. §103**

The Office Action (i) rejects claims 1-5 and 14 under 35 U.S.C. §103(a) over U.S. Patent No. 5,519,425 to Deitl et al. (Deitl) in view of Wolcott and "optionally" in view of the admitted prior art in the specification at paragraphs [0007]-[0009]; and (ii) rejects claims 10 and 11 under 35 U.S.C. §103(a) over Deitl in view of Wolcott and "optionally" in view of the admitted prior art in the specification at paragraphs [0007]-[0009], and further in view of U.S. Patent No. 6,460,965 to Ikegami et al. (Ikegami). Applicants respectfully traverse the rejections.

Deitl discloses a cartridge 10 having a housing 12 having housing stake pins 40. Housing stake pins 40 are inserted into locating holes 43 in heat sink 24 and stake pin ends 41 are ultrasonically formed into heads (Figs. 2-3; col. 6, lines 34-45). The locating holes 43 are straight bore holes through heat sink 24 (Fig. 3).

Thus, Deitl fails to disclose (1) at least one three-dimensional structure having a second surface that is substantially orthogonal to a first surface of the substrate (claim 1) or having a wall substantially orthogonal to the surface of the second object (claim 14) and (2) applying thermal energy from an external heat source.

Wolcott, as discussed above, and the admitted prior art fail to cure the deficiencies of Deitl.

For the foregoing reasons, Applicants respectfully request withdrawal of the rejections.

**V. New Claims**

By this Amendment, new claims 22-28 are added. Because these claims recite a three-dimensional structure being a groove, they read on the elected invention and species.

Because both Deitl and Wolcott fail to disclose a three-dimensional structure being a groove or the application of thermal energy from an external heat source, the claims are patentable over the applied references.

**VI. Conclusion**

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of the claims are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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